P19926.A02

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants : Kazutoshi YASUNAGA et al.

Serial No : 09/849,398
(Division of 09/101,186)

Group Art Unit: 2616

Examiner:

Filed : May 7, 2001

For : EXCITATION VECTOR GENERATOR, SPEECH CODER AND SPEECH DECODER

2
8/15/01

INFORMATION DISCLOSURE STATEMENT

Assistant Commissioner of Patents
Washington, DC 20231

Sir :

In accordance with the duty of disclosure under 37 C.F.R. §1.56, §1.97-1.98, Applicants hereby call the following documents, which were cited in parent Application No. 09/101,186 to the Examiner's attention:

In an Office Action dated May 16, 2000, the Examiner cited the following documents:

(1) U.S. Patent No. 5,293,449 to TZENG, issued on March 8, 1994;

(2) U.S. Patent No. 5,396,576 to MIKI et al., issued on March 7, 1995;

(3) U.S. Patent No. 5,371,853 to KAO et al., issued on December 6, 1994; and

(4) An article by Laflamme et al. Entitled "On Reducing Computational Complexity of Codebook Search in CELP Codes Through the Use of Algebraic Codes," IEEE ICASSP-90.

In an Information Disclosure Statement filed with the U.S. Patent and Trademark Office on October 2, 1998, for the same parent application, the following documents were cited:

(5) M.R. SCHROEDER et al., "Code-Excited Linear Prediction (CELP): High-Quality Speech at Very Low Bit Rates", Proc. ICASSP, pp. 937-940 (1985), cited on page 1 of the present application;

(6) R. SALAMI et al., "8 KBIT/S ACELP Coding of Speech With 10 MS Speech-Frame: A Candidate for CCITT Standardization", ICASSP, pp. II-97 to II-100 (1994), cited on page 7 of the present application;

(7) LINDE et al., "An Algorithm For Vector Quantizer Design", IEEE Transactions On Communications, Vol. Com-28, No. 1, pp. 84-95 (1980), cited on pages 113 and 120 of the present application;

(8) MIKI et al., "A PITCH SYNCHRONOUS INNOVATION CELP (PSI-CELP) CODER FOR 2-4 KBIT/S", 1994 IEEE, pp. II-13 to II-116 (1994);

(9) Japanese Patent Publication No. HEI 7-295598A, published on November 10, 1995, along with an English language abstract;

(10) Japanese Patent Publication No. HEI 6-202697, published on July 22, 1994, along with an English language abstract;

(11) Japanese Patent Publication No. HEI 2-12300, published on January 17, 1990, along with an English language abstract;

(12) Japanese Patent Publication No. HEI 8-044400A, published on February 16, 1996, along with an English language abstract;

(13) Japanese Patent Publication No. HEI 8-016196A, published January 19, 1996, along with an English language abstract;

(14) Japanese Patent Publication No. HEI 6-175695A, published on June 24, 1994, along with an English language abstract;

(15) Japanese Patent Publication No. HEI 8-006600A, published on January 12, 1996, along with an English language abstract; and

(16) Japanese Patent Publication No. HEI 8-279757A, published on October 22, 1996, along with an English language abstract.

Applicants further direct the Examiner's attention to:

(17) U.S. Patent Application No. 09/091,823, filed on July 1, 1998 which issued as U.S. Patent No. 6,115,687 to TANAKA et al., on September 5, 2000.

In an Information Disclosure Statement filed with the U.S. Patent and Trademark Office on April 25, 2000, for the same parent application, the following documents were cited:

(18) Japanese Patent Publication No. HEI 9-6396, published on January 10, 1997, along with an English language Abstract;

(19) Japanese Patent Publication No. HEI 10-63300, published on March 6, 1998, along with an English translation thereof;

(20) WO 99/12156, published March 11, 1999, to Ericson; and

(21) International Telecommunication Union, "Series G: Transmission Systems and Media, Digital systems and Networks -Coding of speech at 8kbit/s using Conjugate Structure Algebraic Code Excited Linear-Prediction (CS-ACELP); Annex D: 64 kbit/s S-ACELP speech coding algorithm, published September 1998.

Applicants note that the following documents were cited in European Search Report for EP 99 12 6129, a counterpart of the present application, in which the following documents were cited:

(22) SALAMI et al., "Real-Time Implementation of a 9.6 Kbit/s ACELP Wideband Speech Coder." Proceedings of the Global Telecommunications Conference, U.S., New York, IEEE, vol -, 1992, pages 447-451, has been cited as an "X" category document (i.e., a document particularly relevant if taken alone) as relevant to claim 1-3

and 7-10 of EP application No. 99 12 6129. Fig. 1 and paragraph "00IVI" were indicated as relevant sections.

(23) KIM et al., "A Complexity Reduction Method for VSELP Coding Using Overlapped Sparse Basis Vectors." Proceedings of the International Conference on Signal Processing Application and Technology, October 18, 1994, has been cited as an "A" category document (i.e., a document indicating technological background) as relevant to claims 1 and 14 of EP application No. 99 12 6129. Fig. 1 and paragraph "0IIII" were indicated as relevant sections.

(24) MILLAR et al., "A Multipulse Speech Codec for Digital Cellular Mobile Phone Use." Proceedings on the Workshop on Speech Coding for Telecommunications, U.S., Boston, Kluwer, vol. -, 1989, pages 87-96, has been cited as an "A" category document (i.e., a document of technological background) as relevant to claims 1 and 14 of EP application No. 99 12 6129. Page 90 was identified as a relevant passage.

(25) EP 680 032 to Nippon Electric Co., published November 2, 1995, has been cited as an "A" category document (i.e., a document indicating technological background) as relevant to claims 1 and 14 of EP application No. 99 12 6129. Page 5, lines 48-57 was identified as relevant.

(26) U.S. Patent 5,293,449 to TZENG, issued March 8, 1994, has been cited as an "A" category document (i.e., a document indicating technological background) as

relevant to claims 1 and 14 of EP application No. 99 12 6129. Page 4 was identified as a relevant passage.

Applicants note that a European Search Report for EP 99 12 6130, another counterpart of the present application, cited documents 23-26 above as "A" category documents (i.e., documents indicating technological background) as relevant to claims 1 and 14 of EP 99 12 6130.

Applicants note that a European Search Report for EP 99 12 6131, another counterpart of the present application, cited documents 23-26 above as "A" category documents (i.e., documents indicating technological background) as relevant to claims 1 and 14 of EP 99 12 6131.

Applicants hereby bring to the attention of the Examiner the European Search Report for EP 99 12 6132, a counterpart of the present application, in which the following documents were cited:

(27) KIM et al., "A Complexity Reduction Method for VSELP Coding Using Overlapped Sparse Basis Vectors." Proceedings of the International Conference on Signal Processing Application and Technology, October 18, 1994, has been cited as an "A" category document (i.e., a document indicating technological background) as relevant to claims 1 and 11 of EP application No. 99 12 6132. Fig. 1 and paragraph "0III!" were indicated as relevant sections.

(28) EP 680 032 to Nippon Electric Co., published November 2, 1995, has been cited as an "A" category document (i.e., a document of technological background) as relevant to claims 1 and 11 of EP application No. 99 12 6132. Page 5, lines 48-57 was identified as a relevant passage.

(29) JP HEI 5-281999, published October 29, 1993, and an English Abstract of the same, has been cited as an "A" category document (i.e., a document of technological background) as relevant to claims 1 and 11 of EP application No. 99 12 6132. The abstract was identified as relevant.

(30) U.S. Patent 5,293,449 to TZENG, issued March 8, 1994, has been cited as an "A" category document (i.e., a document of technological background) as relevant to claims 4 and 14 of EP application No. 99 12 6132. Fig. 4 was identified as relevant.

Applicants hereby bring to the attention of the Examiner the European Search Report for EP 97 91 1460, a counterpart of the present application, in which the following documents were cited:

(31) EP 488 751 to Sharp KK, published June 3, 1992, has been cited as an "A" category document (i.e., a document of technological background) as relevant to claims 1, 12, 20, 37, 43, 57, and 62 of EP application No. 97 91 1460. Column 2, lines 5-11 and 30-34; and column 3, line 42 through column 5, line 18, were indicated as relevant.

(32) U.S. Patent No. 5,428,561 to BRYANT et al., issued June 27, 1995, has been cited as an "A" category document (i.e., a document of technological background) as relevant to claims 1, 12, 20, 37, 43, 57, and 62 of EP application No. 97 91 1460. Column 3, line 62 through column 4, line 7, was indicated as relevant.

In addition, Applicants further note the following co-pending, commonly assigned patent applications:

(33) U.S. Patent Application No. 09/440,087, filed on November 15, 1999;

(34) U.S. Patent Application No. 09/440,083, filed on November 15, 1999;

(35) U.S. Patent Application No. 09/440,092, filed on November 15, 1999;

(36) U.S. Patent Application No. 09/440,199, filed on November 15, 1999; and

(37) U.S. Patent Application No. 09/440,093, filed on November 15, 1999.

In an Information Disclosure Statement filed with the U.S. Patent and Trademark Office on August 2, 2000, for the same parent application, the following documents were cited:

Applicants hereby call the following documents, which were cited in a Supplemental European Search Report, mailed on June 5, 2000, in a corresponding EP Application, issued by the European Patent Office to the Examiner's attention:

(38) An article entitled "A Multi-Mode Variable Rate Speech Coder for CDMA Cellular Systems" by N. TANAKA et al., 1996 IEEE 46th Vehicular Technology

Conference, Mobile Technology for the Human Race (Cat. No. 96CH 35894), April 28 to May 1, 1996, pages 198-202, vol. 1, was cited as a "Y" category document (i.e., a document that is of particular relevance if combined with another document of the same category) with respect to claim 50 of the European Application. The European Examiner indicated Figure 1 to be relevant;

(39) U.S. Patent No. 4,797,925 to L. DANIEL, entitled "Method for Coding Speech at Low Bit Rates", which issued on January 10, 1989, was cited as an "A" category document (i.e., a document relevant to the technological background of the invention) with respect to claims 6, 18 and 60 of the European application. The European Examiner indicated the Abstract to be relevant;

(40) An article entitled "Analysis and Improvements of the Vector Quantization in Selp", by W.B. KLEIJIN et al., 1988 Proceedings of the European Signal Processing Conference, pages 1043 to 1046, was cited as an "A" category document with respect to claims 6, 18 and 60 of the European application. The European Examiner indicated Paragraph 2: "The Adaptive Codebook" to be relevant;

(41) An article entitled "A Complexity Reduction Method for VSELP Coding Using Overlapped Sparse Basis Vectors" by S. J. KIM et al., 1994 Proceedings of the International Conference on Signal Processing Applications and Technology, October 18, 1994, was cited as a "X" category document (i.e., a document that is of particular

relevance) with respect to claims 9, 21, 24, 36, 40, 63 and 64 of the European Application. The European Examiner also cited the document as a "Y" category document with respect to claim 50 of the European application;

(42) EP 488 751, assigned to Sharp KK, published June 3, 1992, was cited as an "A" category document with respect to claims 1, 12, 20, 37, 43, 57 and 62 of the European Application. The European Examiner indicated column 2, line 5 through line 11, column 2, line 30 through 34 and column 3, line 42 through column 5, line 18 as being relevant;

(43) U.S. Patent No. 5,428,561 to BRYANT et al., which issued on June 27, 1995, was cited as an "A" category document with respect to claims 1, 12, 20, 37, 43, 57 and 62 of the European application. The European Examiner indicated the Abstract, as well as column 3, line 62 through column 4, line 7 as being relevant; and

(44) EP 680 032, assigned to NIPPON ELECTRIC CO., published November 2, 1995, was cited as an "A" category document with respect to claims 6, 18 and 60 of the European application. The European Examiner indicated the Abstract as being relevant.

In an Information Disclosure Statement filed with the U.S. Patent and Trademark Office on September 26, 2000, for the same parent application, the following documents were cited:

(45) A copy of PCT/SE98/01515 to Ericsson is enclosed, which claims priority of U.S. Application Nos. 60/057,752, filed on September 2, 1997; 09/034,590, filed on March 4, 1998; and 09/110,989 filed on July 7, 1998. Applicants submit that this document is not prior art, as its filing date is after the priority dates of the above-captioned application. However, Applicants request that the Examiner indicate that he has considered the document by completing the enclosed PTO-1449 form.

In an Information Disclosure Statement filed with the U.S. Patent and Trademark Office on March 7, 2001, for the same parent application, the following documents cited in European application No. 00 12 6875, were cited:

(46) An article entitled "A Complexity Reduction Method for VSELP Coding Using Overlapped Sparse Basis Vectors" by S. J. KIM et al., 1994 Proceedings of the International Conference on Signal Processing Applications and Technology, October 18, 1994, was cited as a "A" category document (i.e., a document of technological background) with respect to claims 1, 2, 12, and 13 of the European Application. The European Examiner indicated that figure 1 and paragraph 0III as being relevant;

(47) EP 680 032, assigned to NIPPON ELECTRIC CO., published November 2, 1995, was cited as an "A" category document with respect to claims 1, 2, 12, and 13 of the European application. The European Examiner indicated page 5, line 48 - 57 as being relevant;

(48) JP HEI 5-281999, published on October 29, 1993, and an English Abstract of the same, was cited as an "A" category document with respect to claims 1, 2, 12, and 13 of the European application. The European Examiner indicated the abstract as being relevant;

(49) U.S. Patent No. 5,293,499 to TZENG, issued on March 8, 1994, was cited as an "A" category document with respect to claims 1, 2, 12, and 13 of the European application. The European Examiner indicated figure 4 as being relevant; and

(50) U.S. Patent No. 5,060,269 to ZINSER, issued on October 22, 1991 was cited as an "X" category document (i.e., particularly relevant if taken alone) with respect to claim 11. The European Examiner indicated the abstract and figure 3 as being relevant.

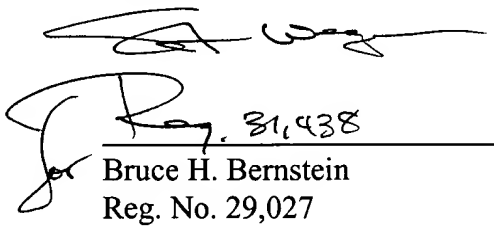
Applicants note that all of the above-mentioned documents (except the previously cited co-pending commonly asssigned patent applications) were either cited by the Examiner or were previously submitted in the form of an Information Disclosure Statement filed in parent Application No. 09/101,186. Therefore, only those documents which were not previously submitted are attached hereto. Applicants further note that documents (33 to 37) comprise the same specification, and thus, only a single copy is provided for documents (33 to 37).

Applicants respectfully request that the Examiner consider the above materials and cite the patent documents. The above-noted documents have been listed on a PTO-1449

Form which is attached hereto. Accordingly, the Examiner is requested to initial the appropriate spaces on the attached PTO-1449 Form and to return a copy of the Form to Applicants with the next official communication in the present application to confirm consideration of these documents.

Should the Examiner have any questions, the Examiner is invited to contact the undersigned at the below-listed telephone number.

Respectfully submitted,
Kazutoshi YASUNAGA et al.



Reg. 31,438

Bruce H. Bernstein
Reg. No. 29,027

August 9, 2001
GREENBLUM & BERNSTEIN, P.L.C.
1941 Roland Clarke Place
Reston, VA 20191
(703) 716-1191